Scleral Lenses Improve Secondary Exposure Keratitis Status Post Frontalis Sling in a Patient with Progressive External Ophthalmoplegia

Stacy Zubkousky OD, FAAO, FSLS, Pooja Alloju OD, Thuy Lan Nguyen OD, FAAO, FSLS
Nova Southeastern University College of Optometry, Fort Lauderdale, Florida

Purpose

This case report details a patient with chronic progressive external ophthalmoplegia (CPOE) who suffers from exposure keratitis. CPOE is a hereditary myopathic disorder often manifesting as bilateral ptosis and ophthalmoplegia. The patient had a history of bilateral ptosis treated with a bilateral frontalis suspension three years ago that resulted in an incomplete lid closure and secondary exposure keratitis with corneal scarring. He was successfully treated with scleral lenses, relieving his debilitating dry eye complaints.

Background

A 44-year-old Black male was referred for a contact lens evaluation by his oculoplastic surgeon. The patient has a history of bilateral ptosis and suffers from CPOE, manifesting in minimal extraocular motility. Post-ptosis surgery, he developed secondary exposure keratitis. At presentation, the patient was using artificial tears four times daily, gel drops at bedtime, and erythromycin ointment PRN.

Exam Findings

BCVA	Keratometry	HVID
OD: 20/25, OS: 20/30	43.75/45.25@010, 41.37/43.25@118	11.0 OD, OS

Pertinent corneal findings:
Inferior sub-epithelial scaring OU, 2-3+ inferior exposure keratitis OS>OD

Contact Lens Diagnostic Fitting:

The patient was fit with 15.8 mm diameter oblate scleral lenses with toric back surface for optimal alignment. The lenses were ordered in Optimum Infinite (OI) with Tangible Hydra-PEG (THP) coating due to the patient's fragile ocular epithelium and co-existing lid disease.

Diagnostic lens:

OD	+1.00 sph	4260	8.44	16.0	LZ: +4	210 BST
OS	-1.00 sph	4510	8.04	16.0	LZ: +4	210 BST

ORx OD: +1.25, VA: 20/20, ORx OS: +1.25, VA: 20/20

Trial lens:

OD	+2.25 sph	4360	8.44	16.0	LZ: +3	210 BST	OI	THP
OS	+0.25 sph	4510	8.04	16.0	LZ: +2	210 BST	OI	THP

ORx OD: plano, VA: 20/20, ORx OS: plano, VA: 20/20

Contact Lens Follow-up

After lens dispensing, the patient was seen back after short term daily lens wear. The patient reported improved dry eye symptoms and visual stability. Before and after anterior segment images were captured to document the pronounced improvement of signs.

Anterior Segment Photography

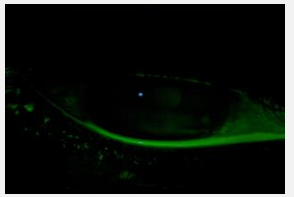
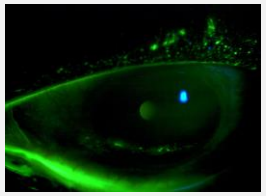

Image 1 & 2: Pre-scleral lens wear OD (left), OS (right)

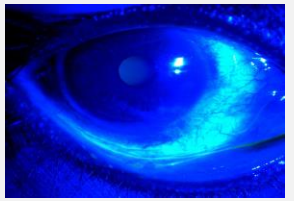
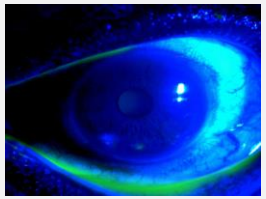

Image 2 & 3: Post-scleral lens wear after 1 month OD (left), OS (right)

Results

The patient continues to wear this lens successfully and is monitored closely.

Discussion and Conclusion

The incidence of dry eye disease after cosmetic blepharoplasty is about 26.5%[1]. The incidence is increased if there is trauma and scarring to the orbicularis oculi muscle, leading to incomplete reflex blink, scleral show, and lagophthalmos. This case illustrates a possible complication of eyelid surgery and how the use of scleral lenses in such instances is a long-term and non-invasive option to help improve signs and symptoms of exposure keratitis.

Reference

1. Zhang SY, Yan Y, Fu Y. Cosmetic blepharoplasty and dry eye disease: a review of the incidence, clinical manifestations, mechanisms and prevention. *Int J Ophthalmol*. 2020;13(3):488-492. Published 2020 Mar 18.